Foreign Bodies in Ear, Nose and Throat (Predictions and Management)

Abstract

Management of a patient with foreign body (FB) in the ENT areas is an art. FB in the respiratory tract is fraught with respiratory obstruction and even death, rarely though, especially in infants and children, if not intervened in time. Fair prediction can be made as to the site and side of lodgment of FB in lower respiratory tract depending on the age of the patient so that timely intervention on the involved side can be made without undertaking haphazard scopy.

Guest Editorial

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Children have the tendency to insert foreign bodies into the natural apertures of the body viz. nose, ears and mouth. I have learnt that significant psychological factors are responsible for the above and management involves psychologists assistance even after extraction of the FB (Banerjee, S, 1997). Once the FB passes beyond the narrowest regions viz isthmus of the external auditory canal, nasal valve area or rima glottidis, extraction of the same becomes more difficult than a FB that is lodged proximal to the above sites. Incidentally the FB in the esophagus is usually lodged just below the cricopharyngeus and still it does not pose any problem for its extraction. Though a foreign body can usually be retraced back along the path it has traversed and extracted in a good number of cases it is extremely difficult or impossible to extract it. Side and site of a FB in lower respiratory tract can be predicted depending on the age of the patient since the change of tracheobronchial angle is a function of age (Ghosh, 1987 and Hasan, Ghosh et al, 1992 and 1993).

Problems and Management

FB in nose :

If it gets lodged at or beyond the nasal valve area, one should be careful not to injure the cribriform plate or let the FB drop into the nasopharynx and larynx while in an attempt at extracting the FB, it is pushed upwards or backwards without inserting a finger in the nasopharynx per orally. Use of pharyngeal packing and cuffed endotracheal tube ensures safety. One should be more careful in dealing with a metallic round FB with smooth surface since it slips when trying to grasp it. Choanae are larger than the anterior parts of the nasal fossae and so the FB passes through them comparatively easily. Unilateral offensive nasal discharge in a child is almost pathognomonic of FB in the nose. Rhinoliths are uncommon. Under local anaesthesia I have removed a very large irregular rhinolith, conforming with elevations and depressions of the lateral nasal wall, form a patient aged twenty years. It was coralloid in appearance. Sinoliths are extremely rare. Bullets have been reported to be lodged in the nasopharynx. I know of a case with a bullet lodged in the mandibulomastoid sulcus producing facialpalsy. This had hit the right cheek and traversed backwards through the soft tissues without injuring the bones and lodged in the mandibulomastoid sulcus. After removal of FB, facial function recovered.

Foreign Body in Ears

Foreign body in ears, beyond the isthmus of the external auditory canal, situated about 5mm from the tympanic membrane, is difficult to remove especially when it is round with smooth surface such as a glass bead or a steel ball that is used in the freewheel of bicycles.These can not be grasped and in an attempt at removal, the Foreign Body may be pushed medially injuring the eardrum, ossicles and even the facial nerve. In extremely difficult cases one may have to drill the canal wall under GA through an endauric incision for extracting it through a surgically enlarged canal. Animate Foreign body e.g. an insect has to be tackled differently. A cotton tampon moistened with ether will stupely the insect within five minutes or they may also be rendered hors de combat by instilling simple oil or mixed with chloroform or benzol which will seal the openings in the sides of the thorax of the insect through which the insect breathes. Then it can be removed manually or by syringing. It is not advisable to instill human urine for killing the insect as often practised in Honduras and Panama. Impacted vegetative F.B in the ear may be shrunk by instilling absolute alcohol or anhydrous glycerin and can be removed with ease.

After effectively mummifying the child with a sheet of cloth, which would render him/her motionless, some of the aforementioned procedures can be carried out safely without GA.

Pharynx and Esophagus

Small fish bones often gel stuck in the lower part of the tonsil adjoining the base of the tongue. This is sometime difficult to remove. Infrequently it may enter the tongue and is propagated anteriorly in the

body of the tongue by the muscular contractions. In that case one has to slit open the tongue and remove the FB. Fish bone in the base of the tongue in the vallecula poses tremendous problem in management. Even after administering general anaesthesia missing the FB is not uncommon. Plain X-ray often does not show it. CT/spiral CT scan can demonstrate the FB in most of the cases with precision. It is difficult to visualise the FB in the base of the tongue through a direct scope and is often possible if the tongue is pulled out under general anaesthesia, thereby raising the FB which then can be grasped and removed. Sometime in lateral soft tissue neck x-ray there may be a foreign body in an abscess with fluid level in the retropharyngooesophageal region. It should be extracted after administration of adequate antibiotics for sealing off the absecess all around so that chances of downward spread of the infection along the retroesophageal region in the mediastinum from the abscess by extraction-manipulation is minimised or avoided. In one such case, when I failed to extract the FB (a chicken bone). I left it there and antibitics was continued. Pain and odynophagia subsided within ten days. Repeat x-ray showed resolution of the abscess and the FB was found to be more or less at the same place. No further intervention was necessary. If the resolution was not satisfactory, removal of the FB through external approach would have been the proper treatment if repeat endoscopic attempt to remove the same failed. A blunt FB e.g. coin is often lodged in the esophagus of a child just below the cricopharyngeus in the coronal plane. These can be predicted as follows. Pharyngeal constrictors are strong enough to propel the FB passed the cricopharyngeal sphincter; but the esophageal muscles are not that strong as to be able to propel it further down and so it is lodged below the cricopharyngeus in the cornal plane as that of the esophageal lumen. Here the removal is not difficult. One has to position the esophageal speculum or esophagoscope with the longer beak placed anteriorly with the bevel looking backwards. The larynx is pushed and lifted anteriorly form behind the cricoid caritlage with the longer anterior beak when the cricopharyngeal sphinter opens up and the FB is readily visualised and extracted. Occasionally the oesophagoscope may override the FB which is missed, especially when its longer beak is on the posterior wall. In the latter situation a sleeve of reduplicated mucosa from the posterior wall may forerun the tip of the scope hiding the FB behind it which is then missed. Subsequent x-ray will reveal the FB at the same place. If the above precaution of pladcing the longer beak anteriroly is undertaken this phenomenon of missing the FB does not usually happen. Infrequently the FB may migrate downwards into the lower part of esophagus or stomach. That is why there should not be any delay in conducting scopy under general anaesthesia once radiological diagnosis has been made. Sharp FB should be tackled properly with a veiw to avoiding injury to the esophageal wall leading to perforation and life threatening mediastinitis. In all cases, especially in elderly, one must keep in mind the presence of an organic stricture (Malignant or benign) in the esophagus which is the cause of retention of the FB. So after extraction of the FB the scope should be pushed downwards to examine the whole of esophagus. One would do well to remember that a child having chronic cough and recurrent lung infection may have been harbouring a FB in the esophagus without much difficulty in swallowing which resulted in recurrent aspiration into the lungs and infection. After extraction of the FB the lung condition promptly resolves. I have seen several children referred from the department of paediatrics, who had treatment for chronic lung infection for a long time. The mother of one child gave the history of slight difficulty in swallowing for a long time which aroused my suspicion of a FB in the esophagus. A plain x-ray demonstrated a coin in the esophagus which was extracted from just below the cricapharyngeus and the child's lung condition improved remarkably within two weeks. Sometime in such cases the diagnosis of FB in esophagus is made incidentally in a routine x-ray of the lungs. A word of advice while removing an impacted FB through lateral pharyngotomy is worth condidening. Before making an incision on the lateral pharyngeal wall a stay suture of silk is to be put below the lower end of the planned incision so

that after extraction of the FB the esophagus does not retract into the thorax and in that case repair of the wound is extremely difficult.

FB in the Respiratory Tract

FB in the larynx at the glottic or subglottic level, as can be predicted, lie in the sagittal plane as that of the rima glottidis. I removed a semilunar flat piece of chicken bone which was stuck between the vocal cords producing hoarseness and slight breathing trouble. History was of one year. After extraction of the FB she was all right. It was a very unusual case. A loose foreign body in the trachea, smaller than tracheal lumber but bigger than bronchial lumen, produces tracheal flutter and its removal usually does not pose any problem. In cases with lung abscess, especially solitary one, lung collapse and bronchiectasis, presence of FB should be meticulously looked for.

Side and site of bronchial FB can be fairly predicted. In children below the age of five the FB is likely to be aspirated into the left bronchus (Ghosh, 1987, Hassan, Ghosh et al, 1992) in contradistinction to the age-old teaching in the text books whereas in adults, into the right bronchus. It has been found that if the difference in the right and left tracheobronchial angles is less than 7^0, aspiration of FB and collapse of lung predominate in the left side as has been explained earlier on anatomical and aerodynamic considerations (Ghosh 1987; Hassan, Ghosh et al, 1992).Accordingly, more stress is to be given on the left side while performing a bronchoscopy on a child and right side in case of an adult. The tip of the scope should be a little away from the seen FB, so that it can be grasped with appropriate forceps for extraction. If the tip is very near or on the FB, then it would be rather impossible for the jaws of the forceps to be opened up for grasping the FB and at a futile attempt at grasping the FB, it would be pushed downwards beyond the point of no return when open surgery i.e. thoracotomy would be necessary for its removal, Vegetative FB which has swollen and got impacted in the bronchus, producing ball-valve or stop-valve obstruction, should be tackled carefully.

In conclusion a word of caution

No FB should be left alone with the hope that it will come out spontaneously or endoscopic extraction would be done later at leisure because the FB from the esophagus may be regurgitated and enter the larynx and that from the nose may drop into the larynx creating emergent situations in both the cases.

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